

AMENDMENTS

In the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Canceled)

2. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim 1 ~~which is characterized in that~~ 17, wherein the photoacid generator is a quinone diazide compound.

3. (Canceled)

4. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim 1 ~~which is characterized in that~~ 17, wherein the absorbance of the polymer represented by general formula (1) at 365 nm is no more than 0.1 per 1 μm of film thickness.

5-8. (Canceled)

9. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim 1 ~~which is characterized in that~~ 17, wherein, in the polymer represented by general formula (1), at least 50% of $\text{R}^1(\text{COOR}^3)_m(\text{OH})_p$ are groups represented by general formula (6), and the group represented by R^2 is a divalent diamine compound residual group which does not contain a hydroxyl group.

10. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim 1 ~~which is characterized in that~~ 17, wherein, in general formula (1), at least 50% of $\text{R}^2(\text{OH})_q$ is a group represented by general formula (7), and the group represented by R^1 is a tetracarboxylic acid residual group.

11. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim 1 ~~which is characterized in that~~ 17, wherein, in general formula (1), at least 50% of $\text{R}^2(\text{OH})_q$ is a group represented by general formula (8), and the group represented by R^1 is a tetracarboxylic acid residual group.

12. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim 1 ~~which is characterized in that 17, wherein~~, in general formula (1), at least 50% of $R^2(OH)_q$ is a group represented by general formula (9), and the group represented by R^1 is a tetracarboxylic acid residual group.

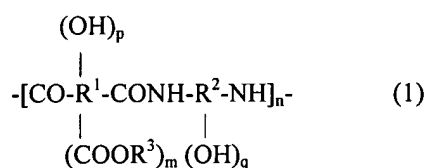
13. (Canceled)

14. (Currently Amended) A method of producing a positive-working photosensitive resin precursor composition according to Claim 13 ~~which is characterized in that 22, wherein~~ the compound represented by general formula (3) is an N,N-dimethylformamide dialkyl acetal.

15. (Currently Amended) A method of producing a positive-working photosensitive resin precursor composition according to Claim 13 ~~which is characterized in that 22, wherein~~ the compound represented by general formula (5) is cyclohexyl vinyl ether.

16. (Currently Amended) A semiconductor passivation layer, a semiconductor device protective film or an interlayer dielectric for multilayer interconnects for high density mounting comprising a heat-resistant resin coating formed of the photosensitive resin composition of claim [[1]] 17.

17. (New) A positive-working photosensitive resin precursor composition containing (a) a polymer in which structural units of the kind denoted by general formula (1) below are the chief component and (b) a photoacid generator, and the total carboxyl groups contained in said polymer is from 0.02 to 2.0 mmol/g:



wherein one of the following conditions (A) and (B) is satisfied:

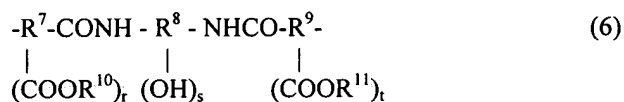
(A) a residual chlorine ion concentration is 30 ppm or less, or

(B) a residual quantity of sodium, potassium and iron ions is 10 ppm or less,

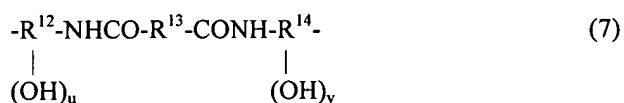
wherein R^1 is an organic group of valency from 3 to 8 having at least 2 carbon atoms, R^2 is an organic group of valency from 2 to 6 having at least 2 carbon atoms, R^3 is hydrogen or a monovalent organic group with from 1 to 10 carbons but it is not all hydrogen nor is it all a monovalent organic group with from 1 to 10 carbons. n is an integer of value from 3 to 100,000, m is 1 or 2, p and q are integers of value from 0 to 4 $p + q > 0$, and

wherein some of the carboxyl groups of the polymer represented by general formula (1) are imidized by reaction with an adjacent amide group, and the percentage such imidization is from 1% to 50% of said carboxyl groups of the polymer represented by general formula (1).

18. (New) A positive-working photosensitive resin precursor composition according to Claim 17, wherein $R^1(COOR^3)_m(OH)_p$ in general formula (1) is represented by the following general formula (6):

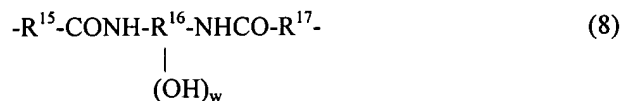


19. (New) A positive-working photosensitive resin precursor composition according to Claim 17, wherein $R^2(OH)_q$ in general formula (1) is represented by the following general formula (7):



wherein R^{12} and R^{14} represent hydroxyl group-containing C_2 to C_{20} organic groups of valency 3 or 4, and R^{13} represents a C_2 to C_{30} divalent organic group, and u and v represent the integer 1 or 2.

20. (New) A positive-working photosensitive resin precursor composition according to Claim 17, wherein $R^2(OH)_q$ in general formula (1) is represented by the following general formula (8):



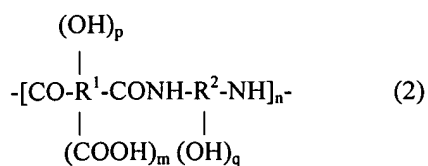
wherein R^{15} and R^{17} represent C_2 to C_{30} divalent organic groups, and R^{16} represents a hydroxyl group-containing a C_2 to C_{20} organic group of valency from 3 to 6, and w represents an integer in the range from 1 to 4.

21. (New) A positive-working photosensitive resin precursor composition according to Claim 17, wherein $R^2(OH)_q$ in general formula (1) is represented by general formula (9):

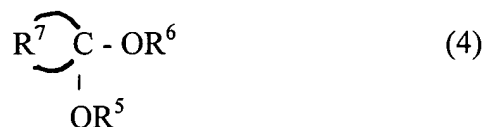
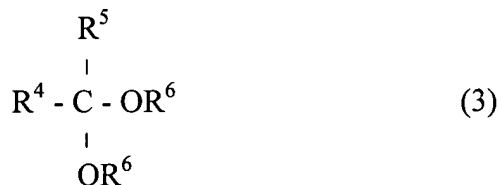


wherein R^{18} represents a C_2 to C_{30} divalent organic group, and R^{19} represents a hydroxyl group-containing a C_2 to C_{20} organic group of valency from 3 to 6, and x represents an integer in the range from 1 to 4.

22. (New) A method of producing a positive-working photosensitive resin precursor composition according to Claim 17, comprising treating a polymer in which structural units represented by general formula (2) below are the chief component with at least one type of compound represented by general formulae (3), (4) or (5) below to produce the compound represented by general formula (2):



wherein R^1 is an organic group of valency from 3 to 8 having at least 2 carbon atoms, and R^2 is an organic group of valency from 2 to 6 having at least 2 carbon atoms, n is an integer of value from 3 to 100,000, m is 1 or 2, p and q are integers of value from 0 to 4 and $p + q > 0$,



wherein R^4 and R^5 represent a hydrogen atom or a monovalent organic group, nitrogen-containing organic group or oxygen-containing organic group with at least one carbon atom, R^6 represents a monovalent organic group with at least one carbon, and R^7 represents a divalent organic group, nitrogen-containing group or oxygen-containing organic group with at least one carbon atom.